

10/529154

CLAIMS

1(Amended). A cooling device, comprising:

5 a cooler provided on at least one side-wall side of a chamber formed with a thermal insulating box;

a cooling chamber in front of the cooler; and

a fan that allows air in the cooling chamber to flow,

wherein the cooler and the cooling chamber are partitioned by a partition so as to allow cold air to be accumulated in the cooler,

10 the fan is disposed on a side of the cooler relative to the partition, the partition in front of the fan has an aperture formed in a flat sheet portion,

an open space is formed between the fan and the flat sheet portion in which the aperture is formed, and

15 cold air accumulated in a space inside the partition and hot air in the cooling chamber are exchanged by the fan through the aperture.

2. The cooling device according to claim 1, wherein dimensions of the aperture are larger than a diameter of the fan.

20 3. The cooling device according to claim 2, wherein when viewing the fan in a direction of a rotation shaft of the fan, the fan is disposed in the aperture and there is an open space outside the fan.

25 4. The cooling device according to claim 1, wherein rotation of the fan generates a discharged flow of cold air discharged from the cooler to the cooling chamber through the aperture and a sucked flow of cold air sucked from the cooling chamber to the cooler through the aperture.

30 5. The cooling device according to claim 4, wherein the discharged flow and the sucked flow collide with each other, thus suppressing a flow speed of the cold air.

35 6. The cooling device according to claim 1, wherein the fan is disposed above the cooler.

7. The cooling device according to claim 1, comprising a plurality of combinations of the fan and the aperture.

5 8. The cooling device according to claim 1, wherein a slit is formed in

the partition at a portion opposed to the cooler or a portion below the cooler.

9. The cooling device according to claim 1, wherein assuming that an area of the aperture is S and a diameter of the fan is R, the following relationship is satisfied:

$$1.5 \times \pi(R/2)^2 \leq S \leq 2 \times \pi(R/2)^2.$$

10. The cooling device according to claim 1, wherein a safety cover is put over the aperture using a net or a slit.

10